Chapter Three: Washington's Vision for Amtrak *Cascades* Service

"The Legislature finds that high-speed ground transportation offers a safer, more efficient, and environmentally responsible alternative to increasing highway capacity. High-speed ground transportation can complement and enhance existing air transportation systems. High-speed ground transportation can be compatible with growth management plans in counties and cities served by such a system. Further, high-speed ground transportation offers a reliable, all-weather service capable of significant energy savings over other modes." RCW 47.79.010

Amtrak *Cascades* train—introduced to the Pacific Northwest Rail Corridor in January 1999.

The State's vision for passenger rail in the Pacific Northwest extends over a twenty-year horizon. The vision is to reduce travel times and provide safe, more frequent, and reliable Amtrak *Cascades* service between Portland, OR and Vancouver, BC. In addition, customer satisfaction is a critical component of this service. Amtrak *Cascades*' trains provide amenities not traditionally seen on passenger rail service—regional menus in the dining cars, onboard movies, business class seating, and a host of other passenger services. These amenities, coupled with the state's service goals, provide the traveling public with passenger rail service unlike any other service in the United States.

The Amtrak *Cascades* program is being implemented through an incremental approach. An incremental approach provides immediate benefits to the traveling public. Service continues to be improved while planning and engineering for future improvements move forward. Improvements include additional or rehabilitated main line tracks, sidings, new train equipment, and more advanced signals and communications systems.

As funding becomes available, projects will be implemented and service will increase. If this incremental approach was not used for the Amtrak *Cascades* program, the traveling public would have to wait up to twenty years in order to benefit from the rail program. This would erode public support and potentially public funding.

Why are these improvements needed?

These improvements are needed because existing rail facilities cannot currently accommodate more frequent rail service or reduced travel times. In addition, the limited capacity of the existing rail line creates conflicts between slower freight trains and higher speed passenger trains. These conflicts adversely affect passenger and freight train scheduling and reliability.

State-sponsored research indicates that once all the infrastructure improvements are in place (for the entire twenty-year program), passenger rail service can be increased to a level that will result in almost three million passengers per year, hourly service between Seattle and Portland, OR, and increased service between Seattle and Vancouver, BC.

What type of passenger rail service do we have today?

Amtrak and the state of Washington operate daily intercity passenger rail service along the entire corridor. Station stops are located in Portland, OR; Vancouver, WA; Kelso/Longview; Centralia; Olympia/Lacey; Tacoma; Tukwila; Seattle; Edmonds; Everett; Mount Vernon; Bellingham; and Vancouver, BC.

All stations on the corridor are served by Washington State's Amtrak *Cascades* trains (sometimes called corridor trains). Two daily round trips connect Seattle and Bellingham: Amtrak *Cascades* #510/517 and #513/516. One of these trains (#510/517) travels north to Vancouver, BC. Three Amtrak *Cascades* trips are available daily between Seattle and Portland: #500/509, #501/506, and #507/508.

Two Amtrak long-distance trains (sometimes called long-haul trains) also serve many of these communities. Amtrak's *Coast Starlight* travels daily between Seattle and Los Angeles, CA via, Tacoma; Olympia/Lacey; Centralia; Kelso/Longview; Vancouver, WA; and Portland, OR.

The *Empire Builder* travels daily between Seattle/Portland, OR and Chicago, IL via Spokane.[1]

What is the difference between long-distance trains and corridor trains?

Long-distance trains start or end outside the Pacific Northwest Rail Corridor. They are typically less frequent—usually providing service only once or twice a day. Their on-time performance is often less reliable because they travel longer distances and are more susceptible to delays.

Amtrak *Cascades* trains (corridor trains), on the other hand, originate and end service within the Pacific Northwest Rail Corridor. Because of this, their reliability and travel times are more predictable and manageable. Today, corridor trains run daily and carry eighty-seven percent of passengers traveling by rail between Portland, OR and Vancouver, BC. Long-distance trains carry thirteen percent of all riders in the rail corridor.

What type of future service is WSDOT planning?

WSDOT's current plans outline rail corridor and service development through year 2023. **Exhibit 3-1**, on the following page, presents an overview of the number of roundtrip passenger trains per day for current and planned service along the corridor. **Exhibit 3-2**, on the following page, summarizes travel times for this service through year 2023. During this time, railroad infrastructure and service will be incrementally upgraded based upon market demand, the availability of partnership investment, and legislative authorization.

The program first began in the early 1990s when the states of Washington and Oregon, the railroads, and others worked together to introduce new corridor train service between Seattle to Portland, OR and Seattle to Vancouver, BC. Washington State plans to incrementally improve Amtrak *Cascades* service over the next twenty years. Improvements to track, safety systems, train equipment and stations will reduce travel times, increase train frequency, and improve safety and reliability.

The travel times and train frequencies presented in this discussion focus on years 2003, 2023, and a mid-point. Year 2023 represents WSDOT's twenty-

[1] *Amtrak's Empire Builder has two routes. One train travels north from Seattle to Everett, and then travels east to Spokane. The other train travels north from Portland, OR to Vancouver, WA where it turns east and travels to Spokane. In Spokane, the two trains are coupled together. The merged train then travels east to Chicago. This process is reversed for westbound trains.*

year build-out plan. A mid-point was chosen as an intermediate service level. The service plans presented in this Chapter assume that all rail infrastructure needed to support the mid-point and year 2023 service levels has been constructed.[2]

Exhibit 3-1
Amtrak *Cascades* Daily Roundtrip Trains

Total Trains	1994	2003	Mid-point	2023
Portland, OR to Seattle, WA	1	3	8	13*
Seattle, WA to Vancouver, BC	0	2**	3	4

**Includes three trains which travel north, beyond Seattle, to Vancouver, BC.*
***Amtrak Cascades #513/516 travels between Seattle and Bellingham.*

Exhibit 3-2
Amtrak *Cascades* Travel Times

Destination	1994	2003	Mid-point	2023
Portland, OR to Seattle, WA	3:55	3:30	3:00	2:30
Seattle, WA to Vancouver, BC	N/A	3:55*	3:25	2:37
Vancouver, BC to Seattle, WA to Portland, OR	N/A	N/A	6:40	5:22

**Travel time for train #510/517.*

Source for Exhibits 3-1 & 3-2: Amtrak Cascades Timetable Effective October 27, 2003, and Amtrak Cascades Operating and Infrastructure Plan Technical Report, 2004.

By service mid-point

By the service's mid-point, WSDOT will have increased Amtrak *Cascades* service to eight trains per day between Seattle and Portland, OR and three round trips per day between Seattle and Vancouver, BC. One of these daily trains will also provide through-service between Portland, OR and Vancouver, BC.

Train travel times will also decrease by the service's mid-point. Current travel times from Seattle to either Vancouver, BC or Portland, OR will decrease by approximately thirty minutes each way. The approximate travel time for passengers from Portland, OR to Vancouver, BC will be just under seven hours.

By the year 2023

By the year 2023, Amtrak *Cascades* service along the Pacific Northwest Rail Corridor will be dramatically different. Travel between Seattle and Portland, OR will increase to thirteen trains per day. Vancouver, BC to Seattle service will include four trains per day, three of which will continue on to Portland, OR.

[2] *Chapter Five of this document presents a list of infrastructure projects necessary for increased service.*

The estimated travel times will be two and one half hours for travel from Seattle to Portland, OR; slightly less than three hours from Seattle to Vancouver, BC; and approximately five and one half hours from Vancouver, BC to Portland, OR. **Exhibits 3-3** and **3-4**, on the following pages, provide an overview of current and planned service for each station in the corridor.

Why wasn't a specific year chosen for the mid-point service level?

The operating and capital plan was designed to be implemented within a twenty-year timeframe. Although analysis and research data are based on specific years of operation,[3] the purpose of an incremental program is to be able to implement service as funding becomes available. As such, specific years of implementation may change, but the specific projects needed to achieve each service level will not. The most important element of the incremental approach is to increase service and build needed infrastructure in the appropriate phases in order to meet service goals throughout the twenty-year horizon.

What are the service goals for years other than the mid-point and year 2023?

The Amtrak *Cascades* program has six levels of incremental implementation. Each level of implementation is the result of capital projects that eliminate the greatest capacity limitation(s) of the corridor.[4] Each of the service and operating plans for the six increments generally reflect the greatest amount of passenger traffic that can be reliably operated after completion of the infrastructure projects associated with that level of service.

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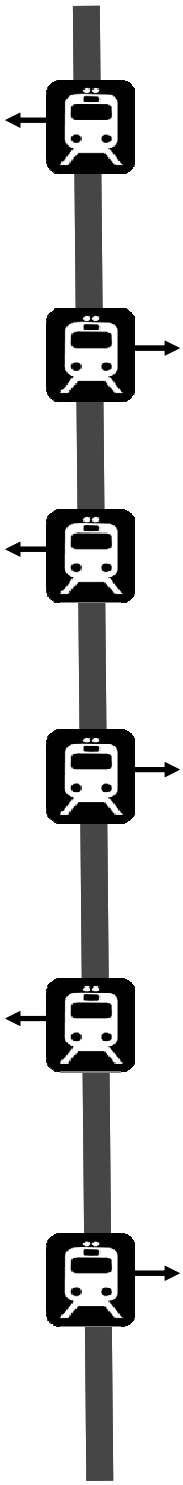
[3]In order to perform ridership, revenue, and cost projections, it was necessary that specific years for service be chosen. Data for such analyses had to be based on actual information. As such, for data and analysis purposes, WSDOT selected year 2008 as the mid-point year based on the assumption that full funding for all projects targeted for implementation between 2003 and 2008 would be available.

Since the initial decision was made to use 2008 as the mid-point for the analysis, WSDOT has recognized that funding levels necessary to meet the program's goals will not be available. Therefore, the implementation years identified throughout this operating and capital plan are placeholders. Implementation of projects and equipment purchases could take longer than anticipated, or could feasibly be expedited, depending upon funding availability. From the inception of the Amtrak Cascades program, implementation goals have always been based on market demand as well as funding.

[4]Although these projects together provide the foundation for the specified service level, each project was carefully developed to ensure that it solves a specific problem within the immediate geographic area. The projects were developed with this independence to ensure that taxpayer's money would not be wasted if all projects were not completed. Each project alone contributes to the incremental development of the overall passenger rail system.

Exhibit 3-3
Amtrak *Cascades* Planned Service: Seattle to Vancouver, BC



Vancouver, BC

	Today	Mid-Point	2023
Travel Times			
To Seattle	3:55	3:25	2:37
To Portland, OR	N/A	6:40	5:22
Round Trips			
To Seattle	1	3	4
To Portland, OR	N/A	2	3

Bellingham

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	1:48	1:39	0:50
To Seattle	2:25	1:59	1:44
To Portland, OR	N/A	5:14	4:29
Round Trips			
To Vancouver, BC	1	3	4
To Seattle	2	3	4
To Portland, OR	N/A	2	3

Mount Vernon

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	2:19	2:10	1:26
To Seattle	1:59	1:31	1:24
To Portland, OR	N/A	4:29	3:55
Round Trips			
To Vancouver, BC	1	3	4
To Seattle	2	3	4
To Portland, OR	N/A	2	3

Everett

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	3:03	2:42	1:55
To Seattle	0:52	0:40	0:39
To Portland, OR	N/A	4:11	3:37
Round Trips			
To Vancouver, BC	1	3	4
To Seattle	2	3	4
To Portland, OR	N/A	2	3

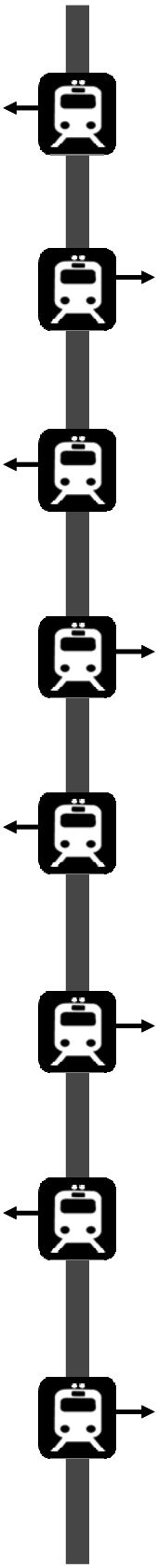
Edmonds

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	3:27	3:03	2:15
To Seattle	0:28	0:21	O:21
To Portland, OR	N/A	3:52	3:19
Round Trips			
To Vancouver, BC	1	3	4
To Seattle	2	3	4
To Portland, OR	N/A	2	3

Seattle

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	3:55	3:25	2:37
To Portland, OR	3:30	3:00	2:30
Round Trips			
To Vancouver, BC	1	3	4
To Portland, OR	3	8	13

Exhibit 3-4
Amtrak *Cascades* Planned Service: Seattle to Portland, OR



Seattle

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	3:55	3:25	2:37
To Portland, OR	3:30	3:00	2:30
Round Trips			
To Vancouver, BC	1	3	4
To Portland, OR	3	8	13

Tukwila

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	4:07	3:15
To Seattle	0:27	0:10	0:12
To Portland, OR	3:13	2:50	2:18
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Tacoma

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	4:34	3:40
To Seattle	0:58	0:51	0:37
To Portland, OR	2:39	2:21	1:50
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Olympia/Lacey

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	4:59	4:02
To Seattle	1:38	1:01	0:59
To Portland, OR	2:02	1:58	1:31
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Centralia

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	5:00	4:16
To Seattle	1:58	1:38	1:24
To Portland, OR	1:39	1:37	1:14
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Kelso/Longview

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	5:40	4:45
To Seattle	2:39	2:16	1:53
To Portland, OR	1:00	1:00	0:47
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Vancouver, WA

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	6:28	5:11
To Seattle	3:12	2:48	2:19
To Portland, OR	0:18	0:11	0:10
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13
To Portland, OR	3	8	13

Portland, OR

	Today	Mid-Point	2023
Travel Times			
To Vancouver, BC	N/A	6:40	5:22
To Seattle	3:30	3:00	2:30
Round Trips			
To Vancouver, BC	N/A	2	3
To Seattle	3	8	13

Exhibit 3-5
Amtrak *Cascades*: Historic Ridership Trends

	1993	1994*	1995	1996	1997	1998	1999
Seattle-Vancouver, BC	0	0	60,407	78,649	82,785	96,196	109,494
Seattle-Portland, OR	94,061	171,960	185,490	188,123	219,425	275,773	296,763
SUBTOTAL	94,061	171,960	245,897	266,772	302,210	371,969	406,257
Portland, OR-Eugene, OR	0	8,249	40,759	37,794	43,768	49,147	43,717
TOTAL	94,061	180,209	286,656	304,566	345,978	421,116	449,974

	2000	2001	2002	2003	2004	2005
Seattle-Vancouver, BC	149,485	144,524	154,330	152,646	156,872	163,753
Seattle-Portland, OR	328,278	319,840	335,863	343,622	353,297	374,008
SUBTOTAL	477,763	464,364	490,193	496,268	510,169	537,761
Portland, OR-Eugene, OR	52,455	96,017	94,153	93,475	92,890	99,131
TOTAL	530,218	560,381	584,346	589,743	603,059	636,892

**1994 was the first year that Washington State began investing in passenger rail*
Note: Does not include non-Washington State sponsored Amtrak services (Coast Starlight, Empire Builder, and Pioneer)
Source: WSDOT Rail Office

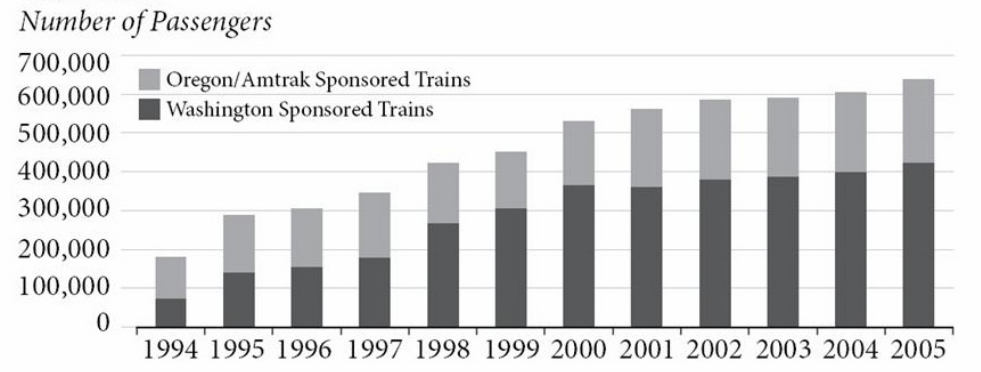
Timetables (train schedules) associated with each of the six levels of implementation were developed based upon the phasing of the capital projects. Timetables are identified sequentially by letter. Year 2003 (current service), is identified as Timetable A. The mid-point service level is identified throughout this document as Timetable C. Year 2023 service is identified as Timetable F. Other increments are identified as B, D, and E. **Appendix A** presents the timetables for these intermediate years, as well as specific construction projects for these service levels.

How many people will ride the train?

Ridership on Amtrak *Cascades* has increased substantially in recent years. In 1993, when service expansion began, annual ridership on Amtrak's Seattle to Portland, OR train was less than 95,000 passengers per year. By 2005, [5] ridership between Seattle and Portland, OR increased to almost 374,000

[5] *Washington State Department of Transportation Rail Office, Ridership Comparison Sheet.*

Exhibit 3-6
Amtrak *Cascades*: Illustration of Historic Ridership Trends



Note: Includes Portland to Eugene, OR Amtrak Cascades trains

annual riders. Anadditional 164,000 riders traveled between Seattle and Vancouver, BC in 2005. **Exhibits 3-5** and **3-6** illustrate past ridership in the corridor.

A review of these trends indicates the direct relationship between Washington State's investments in passenger rail service and infrastructure improvements and increased ridership. This pattern is projected to continue throughout the next twenty years. **Exhibit 3-7** presents current and projected ridership in the corridor for a mid-point service level and year 2023.

Exhibit 3-7
Amtrak *Cascades*: Projected Future Ridership

Corridor	2005	Mid-point	2023
Seattle to Vancouver, BC	163,753	418,100	945,700
Seattle to Portland, OR	374,008	932,100	1,916,400
Portland, OR to Vancouver, BC	NA	59,900	133,200
Total*	537,761	1,410,100	2,995,300

Source: Washington State Department of Transportation Rail Office and Amtrak Cascades Ridership and Revenue Forecasts Technical Report, 2004.

Which will be the busiest stations?

As would be expected, the Seattle, Portland, OR and Vancouver, BC stations are projected to have the highest number of passengers. Both Seattle and Portland, OR are projected to have over one million annual passengers at their stations by year 2023. Vancouver, BC is projected to have just over 700,000 annual passengers. The intermediate stations along the corridor are all projected to have between 100,000 and 400,000 annual passengers by year 2023. **Exhibit 3-8** provides an overview of these volumes.

What if ridership doesn't increase as projected?

WSDOT recognizes that market forces change over time. Consequently, if ridership goals are not met, increased service may not be provided or may be deferred.

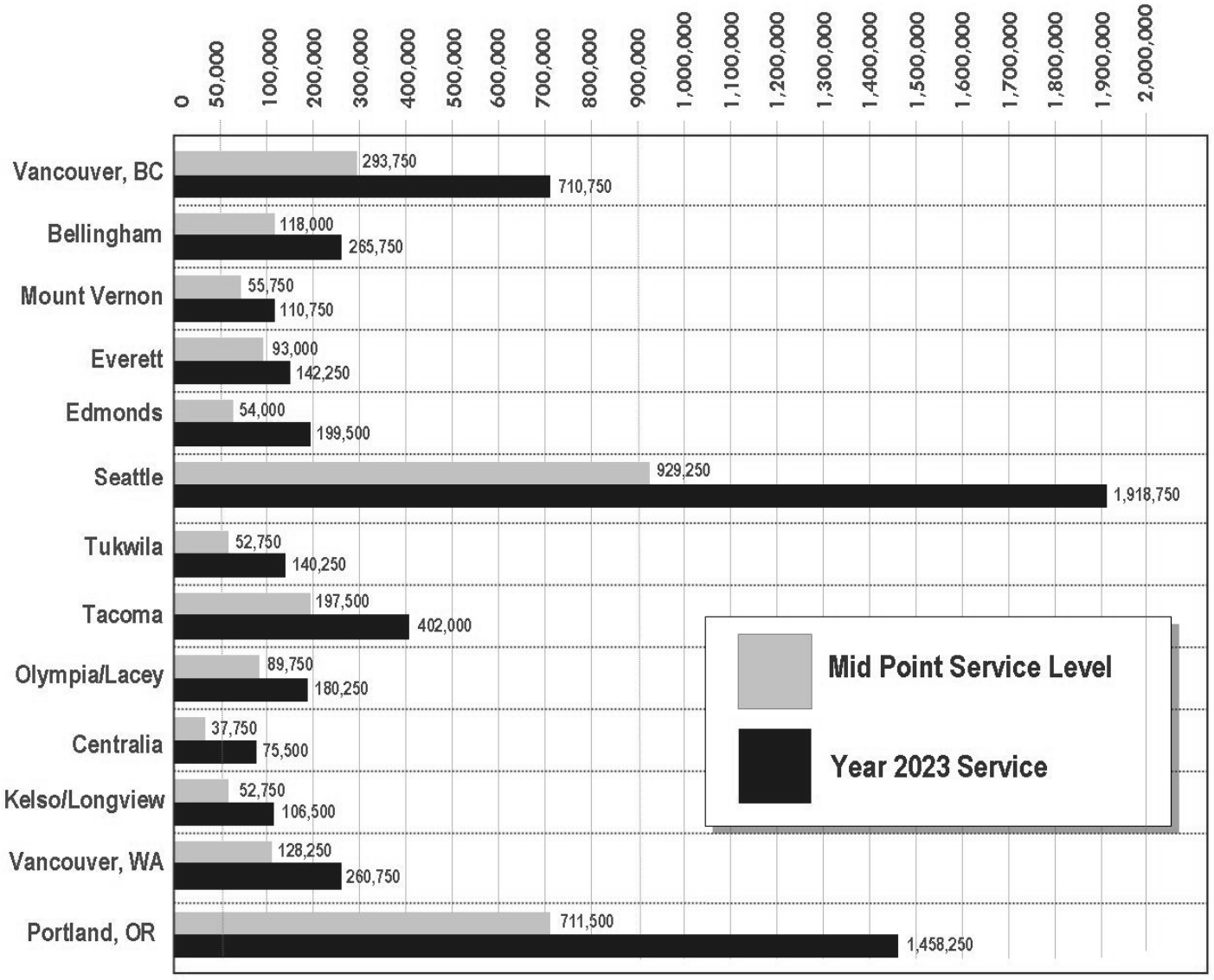
On the other hand, if ridership along the corridor increases beyond WSDOT's projections, it would be possible, based upon legislative funding, to increase service in a shorter time frame. As an experiment, the project team developed an alternative operating plan for the corridor and prepared ridership forecasts. This exercise illustrated the ability of the incremental approach to add service and attract new riders. **Appendix B** presents more information about this alternative operating scenario.

This incremental approach was designed to ensure that the State's investment matched ridership demands. By building with discrete building blocks, implementation of the rail program could stop at any time – without wasting taxpayers' investments. Each improvement is matched to a service level, so no less or no more will be built – unless it is needed.

To ensure that the program reaches its ridership goals, the Amtrak *Cascades* program will be evaluated at the program's mid-point (when eight round trips between Seattle and Portland, OR are reached).[6]

[6] *As identified in Washington's Transportation Plan 1997-2016, Washington State Department of Transportation, 1996, page 49.*

Exhibit 3-8
Projected Annual Passenger Volumes at Amtrak *Cascades* Stations in 2023



Can these goals be achieved under the current funding level?

Development of improved Amtrak *Cascades* service is dependent upon funding from the state of Washington, Amtrak, Sound Transit, the state of Oregon, the province of British Columbia, the federal governments of the United States and Canada, other participating agencies and organizations, and passengers using the service. The level of available funding will determine if service goals are met as scheduled, delayed, or accelerated.

This long-range plan outlines the various construction projects, equipment requirements, and operating expenditures that will need to be funded in order to achieve WSDOT's goals for Amtrak *Cascades* service between Portland, OR, Seattle and Vancouver, BC. This plan assumes that full funding for all identified projects and operating expenditures are available starting in 2003. This approach was taken in order to clearly demonstrate the series of incremental steps that WSDOT and the other funding agencies would follow in order to reach the goals of hourly rail service between Portland, OR and Seattle with a travel time of two and a half hours, and bi-hourly service between Seattle and Vancouver, BC with a travel time of under three hours. While the years that the projects are to be completed may change as a result of available funding, the specific steps that need to be taken to achieve each service increment will not.

The 2003 Washington State Legislature provided over $200 million for construction projects and day-to-day operations that will support safe, faster, more frequent Amtrak *Cascades* service between Portland, Seattle, and Vancouver, BC over the next ten years. This level of funding will allow WSDOT to add a fourth daily round trip train between Seattle and Portland, OR in 2006, complete the projects within the state of Washington necessary to support a second daily round trip between Seattle and Vancouver, BC, and continue the department's program to incrementally add additional service with reduced travel times in the years after 2013. If the goals for Amtrak *Cascades* service are to be realized by 2023, significant levels of funding from all participating organizations - beyond levels currently available - will be required.

What other funding sources could be used to accelerate the program?

For the past several years, the United States Congress has been working toward establishing a dedicated federal funding source for high speed rail construction across the nation. It is anticipated that this new federal program will require state governments and other participating entities to contribute some amount of matching funds for high-speed rail construction projects

within their jurisdictions. As a federally-designated corridor, the PNWRC will be eligible for this proposed federal funding. The states of Washington and Oregon intend to take full advantage of any federal funding that becomes available in order to accelerate the development of the Amtrak *Cascades* program in the Pacific Northwest.

Since the PNWRC is one of only two designated high speed rail corridors that cross an international boundary and connects with a major Canadian city, funding from the province of British Columbia, the Canadian federal government, and Canadian regional sources will be necessary to achieve WSDOT's goals for Amtrak *Cascades* service between Seattle and Vancouver, BC. Funding sources could include the Canadian Strategic Investment Fund and new transportation funding programs that are being considered by Canadian authorities.

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